

EXHIBIT 3

MKIS & Clickstream System

Components, Data Analysis Capabilities and Impact to System Performance

for the BellSouth Interactive Video Services Network Trial

BELLSOUTH Interactive Media Services

This document is a summary report to management on the anticipated system components and resulting capabilities which the Clickstream system will provide to BellSouth.

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1. Overview

The Clickstream system has been designed with a number of inter-operating sub-systems. Clickstream data is captured by applications residing within the Interactive Set-Top Box (STB). A Clickstream Process also runs on the Set-Top which subsequently buffers and transfers subscriber usage data back through the network to the cable headend. The data passes through the Level 1 network from all Set-Tops and uses the data paths primarily used for Level 1 signaling, (Session Management). The data is designed to pass through the CMC and then to be transferred to an Event Capture process running on the Staging Server K2 platform. The data is then stored on the Staging Server where it can then be filtered and merged with data from other sources to reconstruct a timeline of subscriber activity on the Set-Top Box. The software and hardware network elements involved in this process are displayed in figure 1.

2. Analysis Capabilities

When subscriber usage data (Clickstream data) is merged with data which tells us what content played on the network and when (Meta-data), the result is a number of very powerful event timelines which have the capability of tracking the way subscribers are using the BellSouth network in very finite ways with data which has been verified.

The system will allow extremely detailed program **and advertisement** ratings to be generated. This has the potential to create a new advertising paradigm in the United States. Today advertisers pay for spots based on the rating of the program in which they advertise. They do not receive any feedback on numbers of viewers who switch away from the advertising they are paying for. Advertisers are betting that the ratings of the program which are generated from a statistically small sample of the American population is representative of the viewership of their advertisement. The Clickstream /MKIS system will have the ability to give detailed advertisement ratings which advertisers have stated to be extremely valuable to them.

The MKIS / Clickstream system will allow for a wide range of general business decision support reports to be generated. The system has been designed to pull data from almost every operational sub-system: Billing, Demographics data, Interactive Television Operations (Sybase IMS), and the Clickstream system.

One example: a report can be generated to determine for every subscriber who has canceled service (to go to a competitor) their viewing habits for the months previous to cancellation. This data can be correlated to other subscribers who have canceled service, and a pattern can potentially be built. This information can then be used to identify subscribers who may be thinking of leaving the BellSouth service for competitors so that direct mail, special offers, or other types of incentives can be used to decrease overall churn in our subscriber base. Costs are kept to a minimum in this scenario because only subscribers we have determined to be high risk for churn are offered these special incentives.

Other examples of report generation capabilities are: 1) Billing history versus demographics, who doesn't pay on time?, 2) Premium and/or Interactive viewership versus demographics, 3) Profit margin versus demographics, what type of subscriber yields BellSouth best return on investment, 4) Trouble Tickets Versus geographic area, Are there persistent problems in some area of BellSouth Cable plant? These are just a few examples of a broad decision support infrastructure which is put in place with this system.

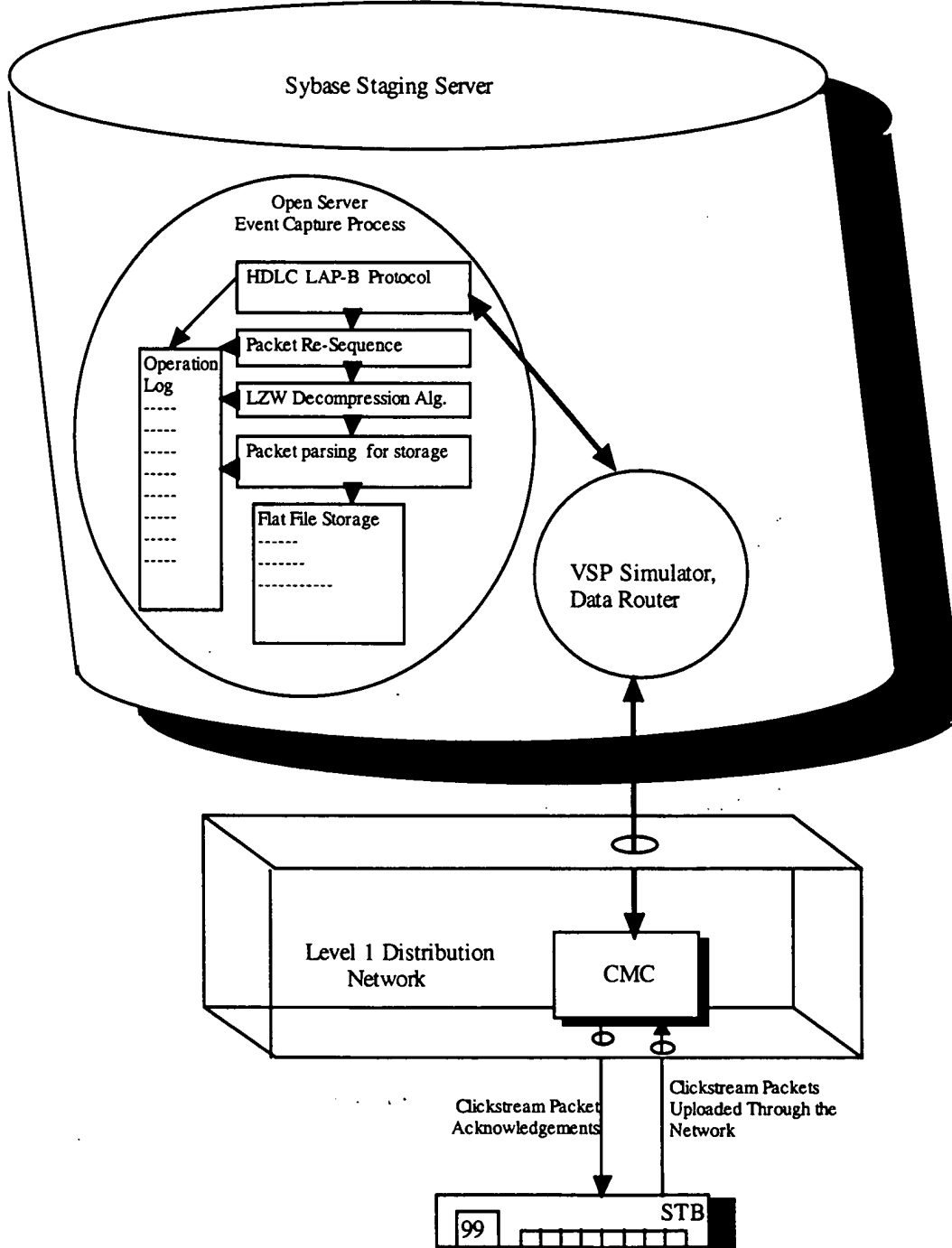


Figure 1: Event Capture Data Flow Elements

3. System Components

The overall MKIS / Clickstream system as proposed today contains a number of software and hardware components. The Clickstream portion is shown in figure 1 above. The overall system consists of the following elements:

- 1) **Clickstream Kernel** STB based background application which handles the buffering and scheduled uploading of Clickstream data through the network.
- 2) **Modified STB Applications** STB Applications which have been modified to send user activity to the Clickstream Kernel.
- 2) **Staging Server VSP Simulator** UNIX process which communicates with the Level 1 CMC and acts as an endpoint to the upload process
- 3) **Clickstream Merge Engine** UNIX processes which bring in data from a number of sources and merge all the data with Clickstream .
- 4) **Staging Server Upload Control** Process which manages when Set-Tops upload their data through the network. STBs will be scheduled to upload in cycles to work around high system usage times, such as prime time, etc.
- 5) **MKIS** Marketing Information System consists of a data warehouse design, a number of data import processes, and a number of PC-type Clients used to make queries and initiate report generation activities.
- 6) **MKIS Interface to I3** Data interface to allow 3rd party substantiation of BellSouth analysis, and additional standardized report generation. This interface includes a "Security Kernel" which keeps all 3rd parties used for such independent analysis from accessing confidential and private information.

4. Impact to System Performance

When the initial stages of system design were undertaken last spring and summer, preliminary analysis was done to understand the types of bandwidths required to support the collection of Clickstream data in the Chamblee trial system. This analysis was done with members of the BST Level 1 Organization to make sure they were comfortable with the proposed use of bandwidth.

Scenario: 4000 Set-Top Boxes in the system are being used 24 hours a day, 7 days a week, and a Click is registered once a minute on every STB.

- Assumptions:
- Reasonable click rate after STB filtering =
1 click per minute uniformly distributed over 24hr x 7days .
 - 4000 subscribers for the trial period. (We will now only have 1500 STBs for the Trial)
 - Uniform upload process through control mechanisms.
 - Average number of bytes per click = 14 uncompressed, 7 bytes per click compressed

- Conclusions:
- Max number bits/second uploaded through system:
3,733 bits/second for overall system
933.25 bits/second per L1 Slotted-Aloha QPSK De-Modulator

This is equal to approximately .12 % of Net system bandwidth.

This is equal to approximately 10% of Scientific Atl. recommended throughput of the CMC.

Max number bytes of raw data to be stored per day:	Clickstream:	80 Megabytes per day
	Content Metadata:	2 Megabytes per day

These numbers are over-estimates of expected data traffic and still well within system capabilities.